What is Claimed is:

1. An apparatus, comprising:

a first circuit, disposed within an integrated circuit, the first circuit having a first positive supply rail coupled to an output terminal of a regulated power supply, the first circuit having at least one operating characteristic that is dependent upon the magnitude of a voltage that is supplied at the output terminal of the regulated power supply, the first circuit operable to provide a first signal indicative of the at least one operating characteristic at a first output terminal; and

a second circuit coupled to the first output terminal of the first circuit, the second circuit adapted to receive a reference clock signal, the second circuit further adapted to compare the first signal and the reference clock signal and to provide a control signal for controlling the magnitude of the voltage that is supplied at the output terminal of the regulated power supply;

wherein the regulated power supply, responsive to the second signal, increases or decreases the magnitude of the voltage that is supplied at the output terminal of the regulated power supply, such that at least one operating characteristic of the first circuit is modified to be within a predetermined range.

2. The apparatus of Claim 1, wherein the first circuit comprises a inverter chain.

3. The apparatus of Claim 1, wherein the first circuit comprises a ring oscillator.

4. The apparatus of Claim 1, wherein the second circuit is disposed within the integrated circuit.

5. The apparatus of Claim 1, wherein the regulated power supply includes a plurality of circuit elements that are disposed external to the integrated circuit.

6. The apparatus of Claim 5, wherein the plurality of circuit elements is disposed within a package that houses the integrated circuit.

7. The apparatus of Claim 1, wherein the at least one operating characteristic of the first circuit is speed.

8. The apparatus of Claim 1, wherein the at least one operating characteristic of the first circuit is leakage current.

9. The apparatus of Claim 1, further comprising a third circuit, coupled to the second circuit, the third circuit adapted to provide a signal indicative of the resistivity of at least one conductor that is disposed within the integrated circuit.

10. The apparatus of Claim 1, further comprising a third circuit, coupled to the second circuit, the third circuit adapted to store a history of the control signals provided for controlling the magnitude of the voltage that is supplied at the output terminal of the regulated power supply.

11. The apparatus of Claim 1, wherein the integrated circuit is a field programmable gate array.

12. A method of operating an electronic product, comprising:

a) operating a first voltage regulator to produce a first voltage at an output thereof;

b) determining whether a first voltage dependent characteristic of a first circuit, the first circuit receiving the first voltage, is within a predetermined range;

c) generating, if the determination of (b) is negative, at least one control signal, and communicating the at least one control signal to the first voltage regulator; and

d) modifying, responsive to the at least one control signal, the operation of the first voltage regulator to produce a second voltage at the output thereof;

wherein the first circuit is disposed within an integrated circuit.

13. The method of Claim 12, further comprising:

e) determining whether the first voltage dependent characteristic of the first circuit, is within the predetermined range;

f) generating, if the determination of (e) is negative, at least one control signal, and communicating the at least one control signal to the first voltage regulator; and

g) modifying, responsive to the at least one control signal, the operation of the first voltage regulator to produce a third voltage at the output thereof.

14. The method of Claim 13, wherein the first voltage dependent characteristic is selected from the group consisting of switching speed and leakage current.

15. The method of Claim 13, wherein the first voltage dependent characteristic is selected from the group consisting of FET drive current, and FET leakage current.

16. The method of Claim 13, further comprising:

h) operating a second voltage regulator to produce a third voltage at an output thereof;

i) determining whether a second voltage dependent characteristic of a first circuit, the first circuit receiving the third voltage, is within a predetermined range;

j) generating, if the determination of (i) is negative, at least one control signal, and communicating the at least one control signal to the second voltage regulator; and

k) modifying, responsive to the at least one control signal, the operation of the second voltage regulator to produce a fourth voltage at the output thereof.

17. The method of Claim 16, wherein the output of the first voltage regulator provides a positive voltage supply to the first circuit, and wherein the second voltage regulator provides substrate bias to the first circuit.

18. The method of Claim 13, further comprising storing a history of the control signals provided to the first voltage regulator.

19. The method of Claim 13, further comprising comparing the control signals provided to the first voltage regulator to a predetermined threshold.

20. The method of Claim 19, further comprising:

determining whether the control signals provided to the first voltage regulator exceed the predetermined threshold; and

generating, if the determination is affirmative, a signal indicating that service is required.

21. The method of Claim 19, further comprising:

receiving information indicating the temperature at which the integrated circuit is operating; and

modifying, responsive to the temperature information, the predetermined threshold.

22. The method of Claim 12, wherein the integrated circuit is a field programmable gate array.